

SUTURE OF THE BRACHIAL ARTERY.

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ON December 21, 1903, John Roberts, white, aged seventeen years, while working in the mines, had his left arm badly crushed about midway between the elbow and shoulder by the wheels of one of the cars. The muscles on the outer side of the arm were badly lacerated, exposing the bone, and the coal-dust was so deeply ground into the tissues that it was impossible to remove it. He was brought to St. Vincent's Hospital late that afternoon. A wet dressing was applied by the resident. I saw him the following morning. His temperature was then above 103° F. I introduced a small rubber tube on the inner side of the arm and put on a constant irrigation of bichloride 1 : 4000. The fever immediately began to subside, and at the end of a week the wound was perfectly clean and the irrigation was discontinued.

On December 28 the arm began to bleed profusely. The Sister in charge of the ward applied a bandage firmly just below the shoulder, and controlled the haemorrhage until he could be brought down to the operating room, where I saw him at once. Upon opening the wound, the artery showed a funnel-shaped ulcer which had perforated, the opening being about as large as the point of a pencil, and at every pulse-beat the whole of the blood stream was forced out through this opening. There was no sign of a radial pulse, and the arm was cold and oedematous, and of a dark color.

My first impulse was to catch up the artery with a pair of forceps and ligate it, but, remembering Dr. Crile's work on temporary ligature of blood-vessels, I decided to try to suture the wound, trusting that the blood had not clotted in the distal end. While waiting for the instruments and suture material, the haemorrhage was controlled by pressure. My first suture was introduced with the arm extended, but tore out when tied, and I saw that it would be necessary to flex the arm and keep it in that position.

I used a small, full-curved intestinal needle with fine silk, introducing it as a purse-string, and upon tying it found that it completely controlled the bleeding. Only one suture was used. A portion of the muscle was dissected up and grafted over the sutured portion of the artery. A dry dressing was applied, and the arm put up in a right angle external tin splint. The hand was slightly elevated and placed on a large hot-water bottle. I could not find the radial pulse when the operation was finished. I saw him again about five hours later, and the radial pulse was as strong as in the other arm, and the puffiness had left the arm, which was now warm and normal in appearance.

A close watch was kept day and night for a week in case the suture should give way.

He was kept in bed about two weeks, and the arm was kept in the splint for two months.

The muscle graft grew over the artery firmly, and could be watched for several weeks before the skin-flaps covered it over.

The wound has healed up perfectly over the sutured artery, and he is beginning to use the arm some.